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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,928	10/19/2001	Charles Eric Hunter	8159.0012-00	4062
23377	7590	10/04/2005	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE, 46TH FLOOR 1650 MARKET STREET PHILADELPHIA, PA 19103			PHAM, VAN T	
			ART UNIT	PAPER NUMBER
			2653	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,928

Applicant(s)

HUNTER ET AL.

Examiner

VAN T. PHAM

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 32-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-14 and 32-55 is/are rejected.
- 7) ☒ Claim(s) 8-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Response to Arguments

1. Applicant's arguments filed 09/08/2005.
2. Applicant's arguments with respect to the claims 1, 32 and 44 have been fully considered but they are not persuasive.

First of all, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "In short, whereas the claimed invention teaches a "layer . . . being substantially opaque . . . [and] having a pattern comprising a plurality of holes" (claim 1), Chikcuma discloses "a plurality of holes in the reflection laver" (Abstract). Applicants submit that a "substantially opaque" layer patentably defines over a "reflection layer" (see page 18 of remarks)) are not having a point here. See Chikcuma col., 2, lines 2-12, discloses a second layer formed on the first layer and being substantially opaque the radiant energy, the second layer having a pattern comprising a plurality of holes (claim 1). Moreover, in the reference discloses that "a reflection layer formed on one flat main surface of said substrate having a track of a plurality of minute through holes formed whereon" (see col. 2, lines 6-8). That is so clear that the reference cover what applicants claimed in at least claim 1 (see the rejection below under 103 (a)).

Second of all, claims 32 and 44, which have been amended "a radiant energy source having an output of radiant energy directed towards the plurality of data holes in the substantially opaque second layer" (claim 32); and "directing radiant energy from a radiant energy source towards the plurality of data holes in the substantially opaque second layer" (claim 44). At least for the same reason above of claim 1, claims 32 and 44 are still rejected under 103 (a) (see the detailed rejection below).

To further assist the Applicant with the guidance with claim language interpretations so that the Applicant can add further/more details limitations from the specification to the claims to overcome the prior arts, the Examiner is presenting MPEP, section 2111, Claim Interpretation; Broadest Reasonable Interpretation as follow: “The court explained that “reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim.” The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.). See also *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the “PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification.””).

Third of all, applicant claimed in claim 1 “each of the holes having a largest dimension which is greater than a wavelength of the radiant energy, the data being stored the presence or absence of a hole in the pattern”. See Kasada et al., discloses the optical recording media has each of the holes having a largest dimension which is greater than a wavelength of the radiant energy (see col. 31, lines 42-53). The wavelength is 658nm, and the dimension of the holes is less than 1. μ m/pit, which is 1000 nm. Therefore, the dimension is 1000 nm > the wavelength

is 658nm. Also, Chikuma does disclose the relationship between sizes of pits and the wavelength of light (see Chikuma col. 1, lines 37-47).

Last but not least, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies ("Kasada et al., dealing with cyanine dyes, also fails to disclose "a second layer . . . being substantially opaque to the radiant energy, [and] the second layer having a pattern comprising a plurality of holes" (claim 1). See also claims 32 and 44) are showing that applicant try to ignore the meaning of the rejection under 103(a) ((a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made). Because Chikuma does not disclose each of the holes having a largest dimension, which is greater than a wavelength of the wavelength of light, therefore the Office Action has been used the secondary reference which is Kasada to rejection the claims. Further see Chikuma discloses a second layerbeing substantially opaque to the radiant energy, [and] the second layer having a pattern comprising a plurality of holes (see Chikuma col. 2).

For at least the above reasons, claims 2-14, 33-43, and 45-55 are also rejected under 103 (a) (see the rejection below).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 12-13, 32, 37, 43-44, 49, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607).

Chikuma, according to Fig. 1A and col. 1, lines 57-68- col. 2, lines 1-12, which discloses a storage media for storage of data thereon, the storage media comprising: a first layer, the first layer being substantially transparent to a predetermined radiant energy used for reading the data (see Fig. 1A element 11); and a second layer formed on the first layer and being substantially opaque to the radiant energy (see Fig. 1A element 14), the second layer having a pattern comprising a plurality of holes (see abstract), the data being stored as the presence or absence of a hole in the pattern (see col. 1, lines 13-19). However, Chikuma does not disclose each of the holes having a largest dimension, which is greater than a wavelength of the radiant energy. Chikuma does disclose the relationship between sizes of pits and the wavelength of light (see col.1, lines 37-47).

Kasada, according to col. 30, lines 42-53, which discloses the optical recording media has each of the holes having a largest dimension which is greater than a wavelength of the radiant energy.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a storage media for storage of data thereon has each of the holes having a largest dimension, which is greater than a wavelength of the radiant energy in Chikuma as suggested by Kasada, the motivation being in order to improve the recording density especially for high density (see Kasada abstract).

Regarding claim 2, the combination of Chikuma and Kasada, which discloses the storage media of claim 1, wherein the first layer is polycarbonate (see Chikuma col. 2, lines 50-55);

Regarding claim 3, the combination of Chikuma and Kasada, which discloses the storage media of claim 1, wherein the second layer is a metalization coating (see Chikuma col. 2, lines 60-68 and col. 3, lines 24-32);

Regarding claim 4, the combination of Chikuma and Kasada, which discloses the storage media of claim 3, wherein the metalization coating is aluminum (see Chikuma col. 2, lines 60-68);

Regarding claim 5, the combination of Chikuma and Kasada, which discloses the storage media of claim 1, wherein the plurality of holes are circular and the largest dimension is a diameter of the circular holes (inherent and see Chikuma Fig. 1A, element 12);

Regarding claim 6, the combination of Chikuma and Kasada, which discloses the storage media of claim 1, wherein the pattern comprises the plurality of holes arranged along a helix beginning near a center of the storage media and extending spirally outward, each successive pass of the helix being separated from a previous pass of the helix by a track pitch (see Chikuma col. 2, lines 28-35 and Fig. 2);

Regarding claim 12, the combination of Chikuma and Kasada, which discloses the storage media of claim 1, further comprising a third layer, the third layer being disposed on the second layer and being substantially transparent to the radiant energy (see Chikuma Fig. 1 element 13 and col. 3, lines 24-32);

Regarding claim 13, the combination of Chikuma and Kasada, which discloses the storage media of claim 12, wherein the third layer is acrylic (see Chikuma col. 2, line 52 and col. 3, lines 24-32);

Regarding claims 32 and 44, the combination of Chikuma and Kasada, which discloses

an apparatus and a method for reading a storage media, the storage media comprising a first layer, the first layer being substantially transparent to a predetermined radiant energy used for reading the data; and a second layer formed on the first layer and being substantially opaque to the radiant energy, the second layer having a pattern comprising a plurality of data holes, each of the data holes having a largest dimension which is greater than a wavelength of the radiant energy, the data being stored as the presence or absence of a data hole in the pattern (see the rejection apply to claim 1), the apparatus comprising: a radiant energy source having an output of radiant energy directed towards the plurality of data holes (see Chikuma col. 2, lines 9-12); and a plurality of detectors for detecting the radiant energy diffusing from the plurality of data holes (see Chikuma col. 1, lines 13-19);

Regarding claims 37 and 49, the combination of Chikuma and Kasada, which discloses an apparatus and a method of claims 32 and 44, respectively, wherein the detectors are photodetectors (inherent);

Regarding claims 43 and 55, the combination of Chikuma and Kasada, which discloses an apparatus and a method of claims 32 and 44, respectively, wherein the radiant energy source is positioned on the side of the storage media having the first layer and is directed towards the detectors that are positioned on the side of the storage media opposite the first layer (see Chikuma Fig. 1A and 2F).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607) further in view of Suzuki (US 6,792,021).

Regarding claim 7, the combination of Chikuma and Kasada, which discloses the storage

media of claim 6, has the plurality of holes. However, the combination of Chikuma and Kasada does not disclose the plurality of holes circular and the largest dimension is a diameter of the circular holes, the diameter of the holes being in a range of about 30 to 100 nanometers.

Suzuki, according to Fig. 2E and col. 4, lines 28, which discloses the plurality of holes circular and the largest dimension is a diameter of the circular holes, the diameter of the holes being in a range of about 30 to 100 nanometers.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a reading a storage media holes circular and the largest dimension is a diameter of the circular holes, the diameter of the holes being in a range of about 30 to 100 nanometers in the combination of Chikuma and Kasada as suggested by Suzuki, the motivation being in order to improve the recording density (see Suzuki col. 4, line 27).

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607) further in view of Siegel (US 6,288,996).

Regarding claim 14, the combination of Chikuma and Kasada, which discloses the storage media of claim 1, wherein the storage media is circular in shape. However, the combination of Chikuma and Kasada does not disclose a data storage area having an inner diameter of about 25 millimeters and an outer diameter of about 115 millimeters.

Seigel, according to col. 4, lines 26-45, which discloses the storage media is circular in shape and has a data storage area having an inner diameter of about 25 millimeters and an outer diameter of about 115 millimeters.

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to provide a reading a storage media a data storage area having an inner diameter of about 25 millimeters and an outer diameter of about 115 millimeters in the combination of Chikuma and Kasada as suggested by Seigel, the motivation being in order to balance or and even more preferably symmetrical (see Seigel col. 4, line 44).

7. Claims 33, 35-36, 45 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607) further in view of Morimoto (US 6,091,693).

Regarding claims 33 and 45, the combination of Chikuma and Kasada, which discloses the apparatus and the method of claims 32 and 44, respectively, wherein the radiant energy source is a laser diode (see Chikuma Fig. 1, element 13). However, the combination of Chikuma and Kasada, does not disclose the radiant energy source is a blue laser diode.

Morimoto, according to col. 1, lines 21-38, which discloses a blue semiconductor laser using in optical recording medium.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus and the method for reading a storage media blue semiconductor laser in the combination of Chikuma and Kasada as suggested by Morimoto, the motivation being in order to improve the recording density by shortening the output wavelength of a semiconductor laser (see Morimoto col. 1, lines 26-29);

Regarding claims 35, 36 and 47, 48 the combination of Chikuma, Kasada and Morimoto, which discloses the apparatus and the method of claims 35, 36 and 47, 48, respectively, wherein the radiant light source has a wavelength in the range of about 50 nanometers to 450 nanometers (the wavelength for the blue laser is about 410 nanometers).

8. Claims 34 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607) further in view of Heffernan (US 6,303,473).

Regarding claims 34 and 46, the combination of Chikuma and Kasada, which discloses the apparatus and the method of claims 32 and 44, respectively, wherein the radiant energy source is a laser diode (see Chikuma Fig. 1, element 13). However, the combination of Chikuma and Kasada, does not disclose the radiant energy source is an ultraviolet laser diode.

Heffernan, according to col. 1, lines 14-25, which discloses an ultraviolet laser using in optical recording medium.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus and the method for reading a storage media ultraviolet laser in the combination of Chikuma and Kasada as suggested by Heffernan, the motivation being in order to improve the recording density by shortening the output wavelength of a semiconductor laser (see col. 1, lines 14-25) (note this can apply to claims 33 and 45).

9. Claims 38-39 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607) further in view of Appelbaum et al. (US 5,039,578).

Regarding claims 38 and 50, the combination of Chikuma and Kasada, which discloses the apparatus and the method of claims 32 and 44, respectively, has photodetectors. However, the combination of Chikuma and Kasada does not disclose the photodetectors are formed of a wide bandgap material.

Appelbaum, according to col. 5, lines 15-46, which discloses the photodetectors are

formed of a wide bandgap material.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus and the method for reading a storage media the photodetectors are formed of a wide bandgap material in the combination of Chikuma and Kasada as suggested by Appelbaum, the motivation being in order to improve higher quantum efficiencies (see Appelbaum col. 1, lines 42-43).

Regarding claims 39 and 51, the combination of Chikuma, Kasada and Appelbaum, which discloses the wide bandgap material is selected from a group consisting of silicon carbide, gallium arsenide, gallium nitride, aluminum nitride, zinc selenide, gallium nitride/aluminum nitride alloy, aluminum nitride/silicon carbide alloy and aluminum gallium nitride/gallium nitride (see col. 5, lines 15-46).

10. Claims 40-42 and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikuma et al. (US 5,182,669) in view of Kasada et al. (US 6,413,607) further in view of Feldman et al. (US 6,522,618).

Regarding claims 40 and 52, the combination of Chikuma and Kasada, which discloses the apparatus and the method of claims 32 and 44, respectively, has the storage media and the detectors for reducing interference from the radiant energy diffusing through unintended data holes. However, the combination of Chikuma and Kasada does not disclose a mask positioned between the storage media and the detectors for reducing interference from the radiant energy diffusing through unintended data holes.

Feldman, according to Figs. 3A-4C and col. 7, lines 57-67-col. 8, lines 1-13, which discloses disclose a mask positioned between the storage media and the detectors.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus and the method for reading a storage media the a mask positioned between the storage media and the detectors in the combination of Chikuma and Kasada as suggested by Feldman, the motivation being in order to improve the position control and/or reading (see Feldman col. 2, line 64).

Regarding claims 41 and 53, the combination of Chikuma, Kasada and Feldman, which discloses the mask comprises a material having a pattern of mask holes arranged to restrict the number of data holes observed by a single detector (see Feldman Fig. 5);

Regarding claims 42 and 54, the combination of Chikuma, Kasada and Feldman, which discloses the mask holes are rectangular in shape (see Feldman Fig. 5) and have a smaller side dimension approximately equal to the largest dimension of the data holes (see Fig. 1C and col. 5, 7-63).

Allowable Subject Matter

11. Claims 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 8-11 are allowable over the prior art of record because all the references in the record, considered as closest references and viewed in combination or individually, fails to suggest or fairly teach an optical information recording reproducing apparatus and recording method including combination of all features as particularly in each of claims 8-11.

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2653

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Cited References

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


The cited references relate high-density optical disk and method of making.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN T. PHAM whose telephone number is 571-272-7590. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP


TAN DINH
PRIMARY EXAMINER
10/3/05